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FILE 'REGISTRY' ENTERED AT 16:43:27 ON 24 APR 2006  
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STRUCTURE FILE UPDATES: 23 APR 2006 HIGHEST RN 881543-45-9  
DICTIONARY FILE UPDATES: 23 APR 2006 HIGHEST RN 881543-45-9

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\*  
\* The CA roles and document type information have been removed from \*  
\* the IDE default display format and the ED field has been added, \*  
\* effective March 20, 2005. A new display format, IDERL, is now \*  
\* available and contains the CA role and document type information. \*  
\*  
\*\*\*\*\*

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REGISTRY includes numerically searchable data for experimental and  
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(FILE 'HOME' ENTERED AT 14:48:21 ON 24 APR 2006)

FILE 'HCAPLUS' ENTERED AT 14:48:32 ON 24 APR 2006

E US20020114604/PN  
L1 1 SEA US2002114604/PN  
D IALL  
SEL RN

FILE 'REGISTRY' ENTERED AT 14:49:39 ON 24 APR 2006

L2 22 SEA (7664-38-2/BI OR 1066-51-9/BI OR 108-31-6/BI OR  
D SCA  
L3 1 SEA 556-52-5/RN  
L4 1 SEA 108-31-6/RN  
L5 1 SEA 156-57-0/RN  
L6 1 SEA 13598-36-2/RN

FILE 'HCAPLUS' ENTERED AT 15:44:22 ON 24 APR 2006

L7 799 SEA L3/D OR L3/DP  
L8 16148 SEA L4/D OR L4/DP

L9 1599 SEA L5  
 L10 10260 SEA L6  
 L11 1084 SEA L9(L)RCT/RL  
 L12 1167 SEA L10(L)RCT/RL  
 L13 2 SEA L11 AND L12  
 L14 36 SEA L7 AND L8  
 L15 1 SEA L14 AND L5 AND L6  
 L16 2 SEA L13 OR L15

FILE 'REGISTRY' ENTERED AT 16:18:26 ON 24 APR 2006

L17 2178 SEA 556-52-5/CRN  
 L18 24322 SEA 108-31-6/CRN  
 L19 300 SEA L18 AND P/ELS  
 L20 21 SEA L19 AND S/ELS  
 L21 21 SEA L20 AND PMS/CI  
 L22 1 SEA 75-21-8/RN  
 L23 196994 SEA 1.30.1/RID  
 L24 109895 SEA L23 AND PMS/CI  
 L25 3390 SEA L24 AND P/ELS  
 L26 271 SEA L25 AND S/ELS

FILE 'HCAPLUS' ENTERED AT 16:28:02 ON 24 APR 2006

L27 19 SEA L21  
 L28 122 SEA L26  
 L29 318916 SEA DIELEC?  
 L30 0 SEA L27 AND L29  
 L31 5 SEA L28 AND L29  
 L32 0 SEA L31 AND COAT?  
 L33 1334458 S BIOCHEMICAL/SC, SX  
 L34 0 S L28 AND L33

FILE 'REGISTRY' ENTERED AT 16:43:27 ON 24 APR 2006

L16 ANSWER 1 OF 2 HCAPLUS COPYRIGHT 2006 ACS on STN  
 ACCESSION NUMBER: 2002:638105 HCAPLUS Full-text  
 DOCUMENT NUMBER: 137:181915  
 TITLE: Phosphorus-containing polymers for optical  
 signal transducers  
 INVENTOR(S): Dorn, Ingmar; Kohler, Burkhard  
 PATENT ASSIGNEE(S): Germany  
 SOURCE: U.S. Pat. Appl. Publ., 12 pp.  
 CODEN: USXXCO  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	---	-----	-----	
US 2002114604	A1	20020822	US 2002-81628	200202 20
DE 10108483	A1	20020905	DE 2001-10108483	200102 22
CA 2438648	AA	20020906	CA 2002-2438648	200202

*Applicant*

WO 2002068481

A1 20020906

WO 2002-EP1399

11

200202

11

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

EP 1366088

A1

20031203

EP 2002-704708

200202

11

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JP 2004528414

T2

20040916

JP 2002-567990

200202

11

PRIORITY APPLN. INFO.:

DE 2001-10108483

A

200102

22

WO 2002-EP1399

W

200202

11

AB Phosphorus-contg. polymers suitable for coating dielec. surfaces are described by the general formulas  $P(A)_m(F)_{n1}(U)_{o1}$  (I) and  $P(A)_m(UF_{n2})_{o2}$  (II) (P = (un)branched, (un)crosslinked homo- or heteropolymeric polymer component; A = identical or different phosphorus-contg. groups bonded to P; m = .apprx.3-1000, F = identical or different functional groups bonded directly or indirectly to P;  $n1$  = .apprx.1-1000;  $n2$  = .apprx.1-100, U = identical or different (un)branched (un)crosslinked oligomeric or polymeric segments made up of identical or different monomers which are bonded to P;  $o1$  = .apprx.0-1000,  $o2$  = .apprx.1-1000). Methods for prepg. the polymers are described which entail copolyng. a monomer contg. a phosphorus-contg. group A, or a plurality of identical or different monomers contg. identical or different phosphorus-contg. groups A, with a monomer contg. a functional group F, or a plurality of identical or different monomers contg. identical or different functional groups F, and optionally, a monomer contg. a segment U, or a plurality of identical or different monomers contg. identical or different segments U, to form I, or with a monomer contg. a unit  $(UF_{n2})_{o2}$ , or a plurality of identical or different monomers contg. identical or different units of the formula  $(UF_{n2})_{o2}$ , to form II. The use of the polymers for coating dielec. materials, in particular dielec. waveguides, and optical signal transducers with dielec. waveguides coated by the polymers are also described. The optical signal transducers having a coated dielec. waveguides may be used for immobilizing chem. and/or biochem. recognition elements.

IT 108-31-6DP, Maleic Acid Anhydride, reaction products with polyglycidols 556-52-5DP, Glycidol, reaction products with fatty acids and phosphoric acid

RL: IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)

(phosphorus-contg. polymers and their prepn. and their use for coating dielec. waveguides and optical signal transducers using coated waveguides)

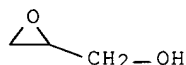
RN 108-31-6 HCAPLUS

CN 2,5-Furandione (9CI) (CA INDEX NAME)



RN 556-52-5 HCAPLUS

CN Oxiranemethanol (9CI) (CA INDEX NAME)



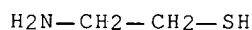
IT 156-57-0 13598-36-2, Phosphonic acid

RL: RCT (Reactant); RACT (Reactant or reagent)

(phosphorus-contg. polymers and their prepn. and their use for coating dielec. waveguides and optical signal transducers using coated waveguides)

RN 156-57-0 HCAPLUS

CN Ethanethiol, 2-amino-, hydrochloride (8CI, 9CI) (CA INDEX NAME)



RN 13598-36-2 HCAPLUS

CN Phosphonic acid (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

IC ICM G02B006-22

ICS C08K005-49

INCL 385128000

CC 9-2 (Biochemical Methods)

Section cross-reference(s): 3, 7, 15, 38, 79, 80

IT 108-31-6DP, Maleic Acid Anhydride, reaction products with polyglycidols 556-52-5DP, Glycidol, reaction products with fatty acids and phosphoric acid 1066-51-9DP, Aminomethanephosphonic acid, reaction products with polymers 1746-03-8DP, Vinylphosphonic acid, reaction products with polyglycidols 7664-38-2DP, Phosphoric acid, reaction products with

polylysine salts 7664-38-2DP, Phosphoric acid, reaction products with polymers 9002-89-5DP, Polyvinyl alcohol, reaction products with polyphosphoric acid 9011-16-9DP, Maleic anhydride-methyl vinyl ether copolymer, reaction products with aminomethanephosphonic acid 9041-77-4P, Dextran phosphate 17261-34-6DP, Iminobismethylene Phosphonic Acid, reaction products with polyglycidols 21282-97-3DP, reaction products with polyglycidols and vinylphosphonic acid 25988-63-0DP, Poly-L-lysine hydrobromide, reaction products with phosphoric acid 26588-20-5DP, reaction products with phosphoric acid 69680-04-2DP, reaction products with phosphoric acid 98980-94-0DP, reaction products with iminobismethylene phosphonic acid and maleic acid anhydride 449188-13-0P

RL: IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)

(phosphorus-contg. polymers and their prepn. and their use for coating dielec. waveguides and optical signal transducers using coated waveguides)

IT 156-57-0 13598-36-2, Phosphonic acid

RL: RCT (Reactant); RACT (Reactant or reagent)

(phosphorus-contg. polymers and their prepn. and their use for coating dielec. waveguides and optical signal transducers using coated waveguides)

L16 ANSWER 2 OF 2 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1990:572165 HCAPLUS Full-text

DOCUMENT NUMBER: 113:172165

TITLE: Phosphonomethylation of aminoalkanols.  
Preparation of 4-(phosphonomethyl)-2-hydroxy-2-oxo-1,4,2-oxazaphosphorinanes

AUTHOR(S): Dhawan, Balram; Redmore, Derek

CORPORATE SOURCE: Petrolite Corp., St. Louis, MO, 63119, USA

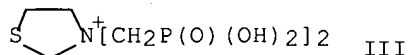
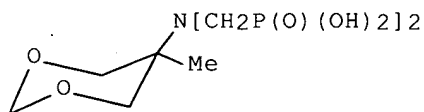
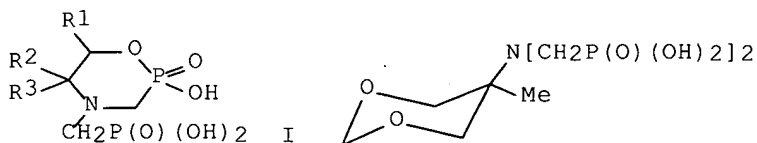
SOURCE: Phosphorus, Sulfur and Silicon and the Related Elements (1990), 48(1-4), 41-7  
CODEN: PSSLEC; ISSN: 1042-6507

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 113:172165

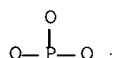
GI



AB Treatment of aminoalkanols HOCHR1CR2R3NH2 (R1 = H, Me, Ph; R2 = H, Me; R3 = H, Me, Et) with phosphorous acid and formaldehyde in the presence of concd.

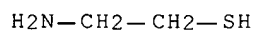
hydrochloric acid gave mixts. of [(2-hydroxyalkyl)imino]dimethylenediphosphonic acids HOCHR1CR2R3N[CH2P(O)(OH)2]2 and 4-(phosphonomethyl)-2-hydroxy-2-oxo- 1,4,2-oxazaphosphorinanes I, which were isolated as cryst. solids. Similar treatment of 2-amino-2-methyl-1,3-propanediol gave a complex mixt. from which dioxane II was isolated. 2-Aminoethanethiol, when subjected to phosphonomethylation, gave an unexpected novel quaternary nitrogen product III. N-Alkylaminoalkanols on phosphonomethylation gave 3:1 mixts. of [N-alkyl-N-(2-hydroxyalkyl)amino]methanephosphonic acids and N-alkyl-2-hydroxy-2-oxo-1,4,2-oxazaphosphorinanes. Treatment of the crude mixts. of the 2 products with aq. sodium hydroxide gave disodium salts of [N-alkyl-N-(2-hydroxyalkyl)amino]methanephosphonic acids. The ratio of the cyclic to the open chain structures obtained as well as the formation of any unexpected novel products is dependent on the structure of the aminoalkanol that is phosphonomethylated. The 1H, 13C and 31P spectra are reported.

IT 13598-36-2, Phosphonic acid  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (phosphonomethylation by formaldehyde and, of aminoalkanols)  
 RN 13598-36-2 HCAPLUS  
 CN Phosphonic acid (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



ONE OR MORE TAUTOMERIC DOUBLE BONDS NOT DISPLAYED IN THE STRUCTURE

IT 156-57-0  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (phosphonomethylation of)  
 RN 156-57-0 HCAPLUS  
 CN Ethanethiol, 2-amino-, hydrochloride (8CI, 9CI) (CA INDEX NAME)



● HCl

CC 29-7 (Organometallic and Organometalloidal Compounds)  
 IT 13598-36-2, Phosphonic acid  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (phosphonomethylation by formaldehyde and, of aminoalkanols)  
 IT 78-96-6 96-20-8 109-83-1 110-73-6 115-69-5,  
 2-Amino-2-methyl-1,3-propanediol 124-68-5 141-43-5, reactions  
 156-57-0 7568-93-6, 2-Amino-1-phenylethanol  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (phosphonomethylation of)

=> d 127 ibib abs hitstr hitind 1-19

L27 ANSWER 1 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN  
 ACCESSION NUMBER: 2005:1291776 HCAPLUS Full-text  
 DOCUMENT NUMBER: 144:43234

TITLE: Photosensitive polyimide precursor composition  
 containing benzoazole backbone structure polymer  
 INVENTOR(S): Imahashi, Satoshi; Wakui, Hiroyuki; Honda,  
 Naohiro  
 PATENT ASSIGNEE(S): Toyo Boseki Kabushiki Kaisha, Japan  
 SOURCE: PCT Int. Appl., 121 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005116770	A1	20051208	WO 2005-JP9770	20050527
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
JP 2005338719	A2	20051208	JP 2004-161177	20040531
JP 2005345537	A2	20051215	JP 2004-161977	20040531
JP 2005345544	A2	20051215	JP 2004-162022	20040531
JP 2005351986	A2	20051222	JP 2004-170414	20040608
JP 2005351987	A2	20051222	JP 2004-170416	20040608
JP 2006058324	A2	20060302	JP 2004-236920	20040817
JP 2006084853	A2	20060330	JP 2004-270232	20040916
PRIORITY APPLN. INFO.:			JP 2004-161177	A 20040531
			JP 2004-161977	A 20040531
			JP 2004-162022	A

		200405 31
JP 2004-170414	A	200406 08
JP 2004-170416	A	200406 08
JP 2004-236920	A	200408 17
JP 2004-270232	A	200409 16
JP 2005-68995	A	200503 11
JP 2005-68996	A	200503 11
JP 2005-68997	A	200503 11
JP 2005-68998	A	200503 11
JP 2005-68999	A	200503 11

AB Disclosed is a photosensitive polyimide precursor compn. capable of forming a resin film which has low thermal expansion coeff., thereby suffering less from lowering of adhesion to a base or warping of the base and being free from deterioration in elec. characteristics, resoln. or the like. Such a photosensitive polyimide precursor compn. is characterized by contg. a polyimide precursor having a benzoazole skeleton in the main chain while having a specific group in a side chain or in the main chain, and if necessary a sensitizer. Since this photosensitive polyimide precursor compn. has a low thermal expansion coeff. after polyimidation, the thermal expansion coeff. difference between a base with low thermal expansion coeff. such as a silicon wafer and a polyimide obtained by applying and thermally cyclizing the photosensitive polyimide precursor compn. on the base can be small. In addn., since adhesion between the base and the polyimide is good and warping can be suppressed while maintaining good developability and sensitivity, there can be obtained a good pattern.

IT 870776-53-7P

RL: IMF (Industrial manufacture); NUU (Other use, unclassified);

PREP (Preparation); USES (Uses)

(prepn. of photosensitive polyimide having benzoazole backbone structure)

RN 870776-53-7 HCAPLUS

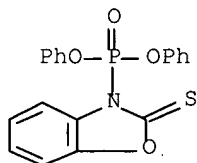


CN Phosphonic acid, (2-thioxo-3(2H)-benzoxazolyl)-, diphenyl ester,  
polymer with 1H,3H-benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone,  
2,5-furandione and 4,4'-oxybis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 111160-56-6

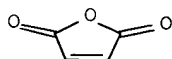
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CM 2

CRN 108-31-6

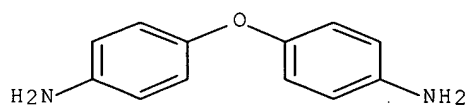
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CM 3

CRN 101-80-4

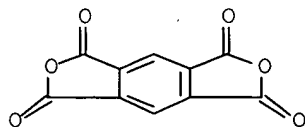
CMF C12 H12 N2 O



CM 4

CRN 89-32-7

CMF C10 H2 O6



IC ICM G03F007-039  
ICS G03F007-022; G03F007-038; H01L021-027  
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
Other Reprographic Processes)  
Section cross-reference(s): 35, 38, 76  
IT 870776-43-5P 870776-45-7P 870776-47-9P 870776-48-0P  
870776-49-1P 870776-51-5P **870776-53-7P**  
RL: IMF (Industrial manufacture); NUU (Other use, unclassified);  
PREP (Preparation); USES (Uses)  
(prepn. of photosensitive polyimide having benzoazole backbone  
structure)

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE  
FOR THIS RECORD. ALL CITATIONS AVAILABLE  
IN THE RE FORMAT

L27 ANSWER 2 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:295977 HCAPLUS Full-text

DOCUMENT NUMBER: 142:374635

TITLE: Method for preparing copolymer terminated with  
multigroups containing ether, phosphonic acid  
and sulfocarboxylic acid for multifunctional  
water treating agent

INVENTOR(S): Gao, Tongzhu

PATENT ASSIGNEE(S): Peop. Rep. China

SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 16  
pp.  
CODEN: CNXXEV

DOCUMENT TYPE: Patent

LANGUAGE: Chinese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	---	-----	-----	
CN 1458172	A	20031126	CN 2003-122759	200304 20
PRIORITY APPLN. INFO.: CN 2003-122759				200304 20

AB The multigroup-terminated copolymer with mol. wt. <10,000 is prepd. by soln.  
copolymerized by mixing an unsatd. carboxylic acid monomer, an unsatd.  
noncarboxylic acid-type monomer, an unsatd. nonacid monomer a bactericidal  
monomer in the presence of water, ≥1 water-sol. initiator, H<sub>3</sub>PO<sub>3</sub> or its salt,  
H<sub>3</sub>PO<sub>2</sub> or its salt, and a water-sol. metal salt. The multifunctional water-  
treating agent comprises (1) the multigroup-terminated copolymer 20-70, (2) a  
polycarboxylic acid copolymer 10-50, (3) a phosphono-carboxylic acid or  
phosphono-sulfo-carboxylic acid 5-20, (4) an organobromine bactericide 3-10,  
(5) an aldehyde bactericide 3-10, (6) an organophosphorus bactericide 3-10,  
(7) a zinc salt 8-15, (8) an organophosphorus corrosion inhibitor 8-20, (9) a  
Cu corrosion inhibitor 1-10, (10) a cleaning aid 2-10% and (11) water to 100%.

IT **849416-10-0P**, 2-Acrylamido-2-methylpropanephosphonic  
acid-2-acrylamido-2-methylpropanesulfonic acid-acrylic  
acid-acryloylmorpholine-glycerol allyl ether-itaconic acid-maleic  
anhydride copolymer

RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM  
(Technical or engineered material use); PREP (Preparation); USES

(Uses)

(method for prep. copolymer terminated with multigroups contg.  
ether, phosphonic acid and sulfocarboxylic acid for  
multifunctional water treating agent)

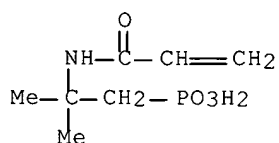
RN 849416-10-0 HCAPLUS

CN Butanedioic acid, methylene-, polymer with 2,5-furandione,  
2-methyl-2-[(1-oxo-2-propenyl)amino]-1-propanesulfonic acid,  
[2-methyl-2-[(1-oxo-2-propenyl)amino]propyl]phosphonic acid,  
4-(1-oxo-2-propenyl)morpholine, 2-propenoic acid and 2(or  
3)-(2-propenyloxy)-1,?-propanediol (9CI) (CA INDEX NAME)

CM 1

CRN 88701-03-5

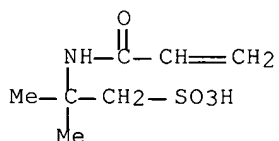
CMF C7 H14 N O4 P



CM 2

CRN 15214-89-8

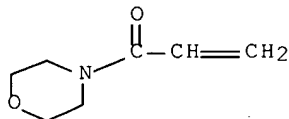
CMF C7 H13 N O4 S



CM 3

CRN 5117-12-4

CMF C7 H11 N O2



CM 4

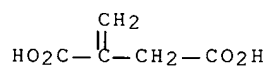
CRN 108-31-6

CMF C4 H2 O3



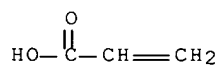
CM 5

CRN 97-65-4  
CMF C5 H6 O4



CM 6

CRN 79-10-7  
CMF C3 H4 O2

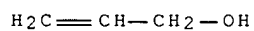


CM 7

CRN 25136-53-2  
CMF C6 H12 O3  
CCI IDS

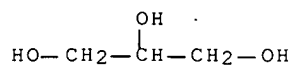
CM 8

CRN 107-18-6  
CMF C3 H6 O



CM 9

CRN 56-81-5  
CMF C3 H8 O3



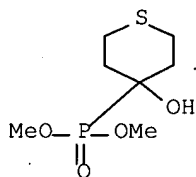
IC ICM C08F002-38  
ICS C08F218-02; C02F005-14  
CC 37-3 (Plastics Manufacture and Processing)  
Section cross-reference(s): 61  
IT **849416-10-0P**, 2-Acrylamido-2-methylpropanephosphonic  
acid-2-acrylamido-2-methylpropanesulfonic acid-acrylic  
acid-acryloylmorpholine-glycerol allyl ether-itaconic acid-maleic  
anhydride copolymer 849416-12-2P, 2-Acrylamido-2-  
methylpropanesulfonic acid-acrylic acid-acryloylmorpholine-glycerol  
allyl ether-itaconic acid-maleic anhydride copolymer 849416-14-4P,  
Acrylic acid-acryloylmorpholine-glycerol allyl ether-  
isoprenesulfonic acid-maleic anhydride copolymer 849416-16-6P,  
2-Acrylamido-2-methylpropanephosphonic acid-acrylic  
acid-acryloylmorpholine-glycerol allyl ether-1,2-dihydroxy-3-butene-  
itaconic acid-maleic anhydride copolymer 849416-17-7P,  
2-Acrylamido-2-methylpropanesulfonic acid-acrylic  
acid-acryloylmorpholine-glycerol allyl ether-isoprenesulfonic  
acid-itaconic acid-maleic anhydride copolymer  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM  
(Technical or engineered material use); PREP (Preparation); USES  
(Uses)  
(method for prep. copolymer terminated with multigroups contg.  
ether, phosphonic acid and sulfocarboxylic acid for  
multifunctional water treating agent)

L27 ANSWER 3 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN  
ACCESSION NUMBER: 2004:511037 HCAPLUS Full-text  
DOCUMENT NUMBER: 141:296396  
TITLE: Effect of heteroatoms on the immobilization of  
heterocycles on polymer supports  
AUTHOR(S): Meirova, G.; Zhubanov, B. A.; Tukanova, S. K.  
CORPORATE SOURCE: Inst. Khim. Nauk im. A. B. Bekturova, MON RK,  
Almaty, Kazakhstan  
SOURCE: Izvestiya Natsional'noi Akademii Nauk Respubliki  
Kazakhstan, Seriya Khimicheskaya (2003), (6),  
57-59  
CODEN: INANDJ  
PUBLISHER: Nauchno-Izdatel'skii Tsentr "Gylym"  
DOCUMENT TYPE: Journal  
LANGUAGE: Russian

AB Styrene-maleic anhydride copolymer was modified by esterification with 4-  
dimethoxyphosphonyl-4-tetrahydropyranol and 4-dimethoxyphosphonyl-4-  
tetrahydrothiapyranol carried out at 75-95° in DMSO in the presence of  
triethylamine. Structure of the prepd. product is proved by IR spectroscopy.  
IT **765301-16-4P**, Maleic anhydride-styrene copolymer, ester with  
4-dimethoxyphosphonyl-4-tetrahydrothiapyranol  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(effect of heteroatoms on the immobilization of heterocycles on  
polymer supports)  
RN 765301-16-4 HCAPLUS  
CN 2,5-Furandione, polymer with ethenylbenzene, 4-  
(dimethoxyphosphinyl)tetrahydro-2H-thiopyran-4-yl ester (9CI) (CA  
INDEX NAME)

CM 1

CRN 163192-85-6  
CMF C7 H15 O4 P S



CM 2

CRN 9011-13-6

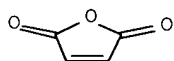
CMF (C8 H8 . C4 H2 O3)x

CCI PMS

CM 3

CRN 108-31-6

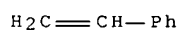
CMF C4 H2 O3



CM 4

CRN 100-42-5

CMF C8 H8



CC 35-8 (Chemistry of Synthetic High Polymers)

IT 765301-15-3P, Maleic anhydride-styrene copolymer, ester with

4-dimethoxyphosphonyl-4-tetrahydropyranol **765301-16-4P**,

Maleic anhydride-styrene copolymer, ester with 4-dimethoxyphosphonyl-4-tetrahydrothiapyranol

RL: SPN (Synthetic preparation); PREP (Preparation)

(effect of heteroatoms on the immobilization of heterocycles on polymer supports)

L27 ANSWER 4 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2004:391390 HCAPLUS Full-text

DOCUMENT NUMBER: 140:391889

TITLE: Photoreactive compositions, photocurable compositions, and photoreactive adhesives or sealing materials

INVENTOR(S): Hatta, Bungo; Fukui, Hiroshi; Kawabata, Kazuhiro

PATENT ASSIGNEE(S): Sekisui Chemical Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 26 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004137433	A2	20040513	JP 2002-305968	20021021
PRIORITY APPLN. INFO.:				20021021

AB Title compns. comprise (A)  $XmR3$ -mSi-contg. compds. (X = hydrolyzable group; R = hydrocarbyl; m = 1-3), (B)  $C(:O)YnZn-2C(:O)$ -contg. compds. (n = 2-5; Y = Group IVA, VA, VIA element; Z = H, hydrocarbyl, OH, SH, amino, halo, alkoxy, alkylthio, carbonyloxy, O), and (C) isocyanate-contg. compds. Thus, ESS 3630 (A), maleic anhydride, Irgacure 819 [bis(2,4,6-trimethylbenzoyl)phenylphosphine] oxide, and Desmodur RFE [tris(isocyanatophenyl) thiophosphate] were applied on a poly(ethylene terephthalate) film, irradiated with UV light, and kept at 20° and relative humidity 50% to give a test piece showing T-peel strength 1.00 N/cm.

IT 688048-65-9P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(photoreactive compns. for adhesives and sealants with good adhesion to polyesters)

RN 688048-65-9 HCAPLUS

CN 2,5-Furandione, polymer with Excestar ESS 3630 and O,O,O-tris(4-isocyanatophenyl) phosphorothioate (9CI) (CA INDEX NAME)

CM 1

CRN 473713-42-7

CMF Unspecified

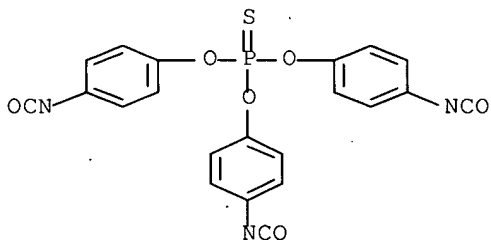
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 4151-51-3

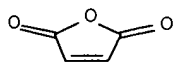
CMF C21 H12 N3 O6 P S



CM 3

CRN 108-31-6

CMF C4 H2 O3



IC ICM C08G018-61  
ICS C08K005-09; C08K005-29; C08L101-10; C09J175-04; C09J201-10;  
C09K003-10; C08G077-04  
CC 37-6 (Plastics Manufacture and Processing)  
Section cross-reference(s): 38  
IT 685835-91-0P 685835-93-2P 688048-64-8P **688048-65-9P**  
688048-66-0P 688048-67-1P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered  
material use); PREP (Preparation); USES (Uses)  
(photoreactive compns. for adhesives and sealants with good  
adhesion to polyesters)

L27 ANSWER 5 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN  
ACCESSION NUMBER: 2002:660513 HCAPLUS Full-text  
DOCUMENT NUMBER: 137:155531  
TITLE: Sulfonate copolymer containing phosphorus and  
its preparing process and application  
INVENTOR(S): Tang, Shouyin; Huang, Jie; Dai, Youzhi; Rao,  
Guichun; Jing, Guohua  
PATENT ASSIGNEE(S): Xiangtan Univ., Peop. Rep. China; Research  
Institute of Analysis and Testing  
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 6  
PP.  
CODEN: CNXXEV  
DOCUMENT TYPE: Patent  
LANGUAGE: Chinese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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CN 1313345	A	20010919	CN 2000-113316	200003 09
PRIORITY APPLN. INFO.:			CN 2000-113316	200003 09

AB The copolymer is prepd. by copolymn. of an org. anhydride, preferably, maleic anhydride (MA) with 2-acrylamido-2-methylpropanesulfonic acid (AMPS) and 2-acrylamido-2-methylpropanephosphonic acid (AMPP) in the presence of an initiator (peroxide, hypophosphorous acid or salt) in water at 60-90° for 1-6 h. The copolymer can be used as water treating agent, which imparts scale inhibition and corrosion inhibition to water having high alky., high hardness, and high pH value. A 10:4:1 MA-AMPS-AMPP copolymer was prepd. by polymn. using H2O2 and Na hypophosphite at 80° for 2 h.

IT **287931-30-0P**, 2-Acrylamido-2-methylpropanephosphonic acid-2-acrylamido-2-methylpropanesulfonic acid-maleic anhydride



copolymer

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(sulfonate copolymer contg. phosphorus for water treatment agents)

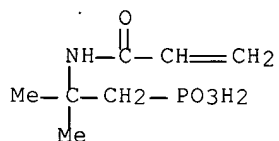
RN 287931-30-0 HCAPLUS

CN 1-Propanesulfonic acid, 2-methyl-2-[(1-oxo-2-propenyl)amino]-, polymer with 2,5-furandione and [2-methyl-2-[(1-oxo-2-propenyl)amino]propyl]phosphonic acid (9CI) (CA INDEX NAME)

CM 1

CRN 88701-03-5

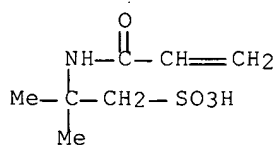
CMF C7 H14 N O4 P



CM 2

CRN 15214-89-8

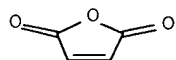
CMF C7 H13 N O4 S



CM 3

CRN 108-31-6

CMF C4 H2 O3



IC ICM C08F230-02

ICS C02F001-56

CC 37-3 (Plastics Manufacture and Processing)

Section cross-reference(s): 38, 61

IT 287931-30-0P, 2-Acrylamido-2-methylpropanephosphonic acid-2-acrylamido-2-methylpropanesulfonic acid-maleic anhydride copolymer

RL: IMF (Industrial manufacture); TEM (Technical or engineered

material use); PREP (Preparation); USES (Uses)  
(sulfonate copolymer contg. phosphorus for water treatment  
agents)

L27 ANSWER 6 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:931063 HCAPLUS Full-text

DOCUMENT NUMBER: 136:370312

TITLE: Study of polymerization of maleic anhydride in  
water

AUTHOR(S): Jing, Guo-hun; Tang, Shou-yin; Dai, You-zhi

CORPORATE SOURCE: Dep. Environmental Engineering, Xiangtan Univ.,  
Xiangtan, 411105, Peop. Rep. China

SOURCE: Jingxi Huagong (2001), 18(11), 650-652

CODEN: JIHUFJ; ISSN: 1003-5214

PUBLISHER: Jingxi Huagong Bianjibu

DOCUMENT TYPE: Journal

LANGUAGE: Chinese

AB A series of copolymers were prepd. under different ratio and dosage of some of the five types of monomers and four groups of initiators with maleic anhydride in water. The monomers were 2-acrylamido-2-methylpropanesulfonic acid (AMPS), 2-acrylamido-2-methylpropanephosphonic acid (AMPP), acrylic acid (AA), acrylamide (AM) and Me acrylate. The initiation systems were persulfate-FeF<sub>2</sub>, H<sub>2</sub>O<sub>2</sub>-Fe<sup>2+</sup>, persulfate-hypophosphite and hydrogen peroxide-hypophosphite. Anal. and comparison were done on the polymn. activity and the behavior of copolymers in scale inhibition. AMPS could be used as a second monomer for this system. Among the third monomers and initiation systems discussed, AMPP and hydrogen peroxide-hypophosphite system were the best. Under the conditions that the dosage of hypophosphite was 10% of the total wt. of monomers (ratio of hydrogen peroxide to hypophosphite was 1.0 to 1.2), m(MA):m(AMPS) = 8:6, m(MA):m(AMPS):m(AMPP) = 10:4:1 and the use level of copolymer was 12 mg/L in inhibiting CaCO<sub>3</sub> and 18 mg/L in inhibiting Ca<sub>3</sub>(PO<sub>4</sub>)<sub>2</sub>, the polymn. rate of MA/AMPS copolymer and CaCO<sub>3</sub> and Ca<sub>3</sub>(PO<sub>4</sub>)<sub>2</sub> scale inhibitory rate were 93.41%, 6.29% and 100% resp., while for the MA/AMPS/AMPP polymer, polymn. rate and CaCO<sub>3</sub> and Ca<sub>3</sub>(PO<sub>4</sub>)<sub>2</sub> scale inhibitory rate were up to 92.80%, 97.61% and 95.92% resp.

IT 424821-39-6P

RL: PRP (Properties); SPN (Synthetic preparation); PREP  
(Preparation)  
(polymn. of maleic anhydride in water)

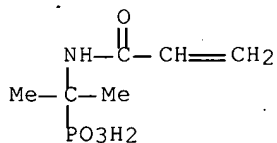
RN 424821-39-6 HCAPLUS

CN 2-Propanesulfonic acid, 2-[(1-oxo-2-propenyl)amino]-, polymer with  
2,5-furandione and [1-methyl-1-[(1-oxo-2-  
propenyl)amino]ethyl]phosphonic acid (9CI) (CA INDEX NAME)

CM 1

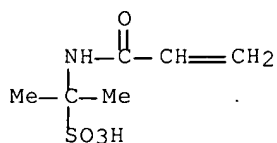
CRN 134423-58-8

CMF C6 H12 N O4 P



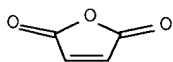
CM 2

CRN 69418-27-5  
CMF C6 H11 N O4 S



CM 3

CRN 108-31-6  
CMF C4 H2 O3



CC 37-3 (Plastics Manufacture and Processing)  
IT 424821-38-5P **424821-39-6P** 424821-40-9P 424821-41-0P  
424821-42-1P  
RL: PRP (Properties); SPN (Synthetic preparation); PREP  
(Preparation)  
(polymn. of maleic anhydride in water)

L27 ANSWER 7 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN  
ACCESSION NUMBER: 2001:874766 HCAPLUS Full-text  
DOCUMENT NUMBER: 136:267808  
TITLE: Preparation of scale inhibitor resistant to high  
hardness, high alkalinity and high pH water  
AUTHOR(S): Zhou, Zuo-ming; Jing, Guo-hua; Tang, Shou-yin;  
Dai, You-zhi  
CORPORATE SOURCE: Dep. Environmental Science, Human Agricultural  
Univ., Changsha, 410128, Peop. Rep. China  
SOURCE: Jingxi Huagong Zhongjianti (2001), 31(4), 21-24  
CODEN: JHZIAR; ISSN: 1009-9212  
PUBLISHER: Jingxi Huagong Zhongjianti Zazhishe  
DOCUMENT TYPE: Journal  
LANGUAGE: Chinese

AB A copolymer was prepd. from maleic anhydride, 2-acrylamido-2-methylpropanesulfonic acid and 2-acrylamido-2-methylpropanephosphoric acid. The polymn. was initiated by hypophosphite sodium and peroxide in an aq. soln. Factors effecting on the polymn. rate, the scale inhibiting efficiency and dispersing ferric oxide ability, such as the ratio of monomers, the ratio of initiator, were investigated. Through static and dynamic scale inhibiting expt., the scale inhibiting efficiency of the copolymer was also tested under conditions of high hardness, high alky. and high pH. The results showed that the copolymer had a good polymn. rate. It was a good scale inhibitors for industrial circular cooling water of high hardness, high alky. and high pH.

IT **405095-72-9P**  
RL: NUU (Other use, unclassified); PNU (Preparation, unclassified);  
PREP (Preparation); USES (Uses)

(prepn. of scale inhibitor resistant to high hardness and high alky. and high pH water)

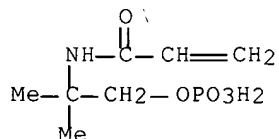
RN 405095-72-9 HCAPLUS

CN 1-Propanesulfonic acid, 2-methyl-2-[(1-oxo-2-propenyl)amino]-, polymer with N-[1,1-dimethyl-2-(phosphonooxy)ethyl]-2-propenamide and 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

CRN 61005-19-4

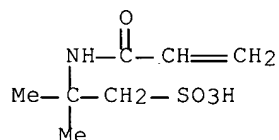
CMF C7 H14 N O5 P



CM 2

CRN 15214-89-8

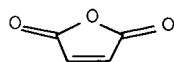
CMF C7 H13 N O4 S



CM 3

CRN 108-31-6

CMF C4 H2 O3



CC 61-8. (Water)

IT 405095-72-9P

RL: NUU (Other use, unclassified); PNU (Preparation, unclassified);  
PREP (Preparation); USES (Uses)  
(prepn. of scale inhibitor resistant to high hardness and high alky. and high pH water)

L27 ANSWER 8 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2000:828822 HCAPLUS Full-text

DOCUMENT NUMBER: 134:20674

TITLE: Cement dispersant and cement composition having

INVENTOR(S): high fluidity and fast setting property  
 Ogawa, Shoichi; Ichimura, Takao  
 PATENT ASSIGNEE(S): Taiheiyo Cement Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000327386	A2	20001128	JP 1999-133486	19990514

PRIORITY APPLN. INFO.: JP 1999-133486  
 19990514

AB The cement dispersant contains, as the main component, a polymer from polyalkylene glycol chain-contg. monoester or monoether and monomer having unsatd. bond and phosphoric group. The cement compn. contains the cement dispersant at 0.01-1.0 wt. part/100 wt. parts of the cement compn. The cement dispersant improves the fluidity and setting of the cement compns. (e.g., mortar) regardless the water/cement ratio.

IT 309918-42-1

RL: TEM (Technical or engineered material use); USES (Uses)  
 (polymeric cement dispersant and cement compn. having high fluidity and fast setting property)

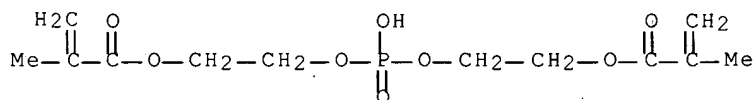
RN 309918-42-1 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, phosphinicobis(oxy-2,1-ethanediyl) ester, polymer with 2,5-furandione,  $\alpha$ -(2-methyl-1-oxo-2-propenyl)- $\omega$ -methoxypoly(oxy-1,2-ethanediyl), 2-(phosphonooxy)ethyl 2-methyl-2-propenoate and sodium 2-methyl-2-propene-1-sulfonate (9CI) (CA INDEX NAME)

CM 1

CRN 32435-46-4

CMF C12 H19 O8 P

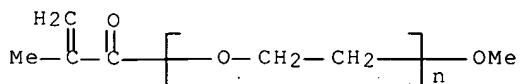


CM 2

CRN 26915-72-0

CMF (C2 H4 O)<sub>n</sub> C5 H8 O2

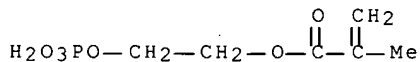
CCI PMS



CM 3

CRN 24599-21-1

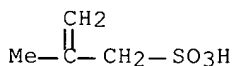
CMF C6 H11 O6 P



CM 4

CRN 1561-92-8

CMF C4 H8 O3 S . Na



● Na

CM 5

CRN 108-31-6

CMF C4 H2 O3



IC ICM C04B024-26

ICS C04B024-26; C08F290-06; C04B103-32

CC 58-3 (Cement, Concrete, and Related Building Materials)

Section cross-reference(s): 38

IT 309918-38-5 309918-39-6 309918-40-9 309918-41-0

309918-42-1

RL: TEM (Technical or engineered material use); USES (Uses)

(polymeric cement dispersant and cement compn. having high fluidity and fast setting property)

L27 ANSWER 9 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2000:579893 HCAPLUS Full-text

DOCUMENT NUMBER: 133:164401

TITLE: Synthesis of MA-AMPS-AMPP copolymer and its

scale inhibition

AUTHOR(S): Jing, Guohua; Tang, Shouyin; Dai, Youzhi

CORPORATE SOURCE: Department of Environmental Engineering,  
Xiangtan University, Xiangtan, 411105, Peop.  
Rep. China

SOURCE: Gongye Shuichuli (2000), 20(7), 13-15  
CODEN: GOSHFA; ISSN: 1005-829X

PUBLISHER: Gongye Shuichuli Zazhishe

DOCUMENT TYPE: Journal

LANGUAGE: Chinese

AB The MA-AMPS-AMPP copolymer was prepd. by aq. polymn. of maleic anhydride (MA),  
2-acrylamido-2-methyl-1-propanesulfonic acid, and 2-acrylamido-2-  
methylpropylphosphonic acid (AMPP) with FeSO4-H2O2 as initiator. The effects  
of MA:AMPS:AMPP, amt. of initiator, reaction temp. and time on polymn. ratio  
and scale inhibition efficiency were discussed. The addn. of a small amt. of  
(NH4)2S2O8 and NaH2PO2 to the initiation system could greatly improved scale  
inhibition efficiency of the product. The copolymer showed good scale  
inhibition efficiency for CaCO3 and Ca3(PO4)2.

IT 287931-30-0P, 2-Acrylamido-2-methylpropylphosphonic  
acid-2-acrylamido-2-methylpropylsulfonic acid-maleic anhydride  
copolymer  
RL: SPN (Synthetic preparation); TEM (Technical or engineered  
material use); PREP (Preparation); USES (Uses)  
(prepn. and application for scale inhibition)

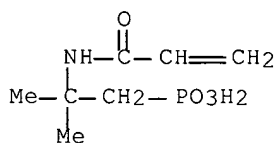
RN 287931-30-0 HCAPLUS

CN 1-Propanesulfonic acid, 2-methyl-2-[(1-oxo-2-propenyl)amino]-,  
polymer with 2,5-furandione and [2-methyl-2-[(1-oxo-2-  
propenyl)amino]propyl]phosphonic acid (9CI) (CA INDEX NAME)

CM 1

CRN 88701-03-5

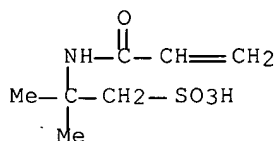
CMF C7 H14 N O4 P



CM 2

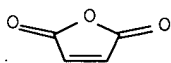
CRN 15214-89-8

CMF C7 H13 N O4 S



CM 3

CRN 108-31-6  
CMF C4 H2 O3

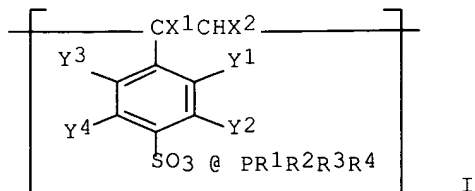


CC 35-4 (Chemistry of Synthetic High Polymers)  
Section cross-reference(s): 38  
IT 287931-30-0P, 2-Acrylamido-2-methylpropylphosphonic  
acid-2-acrylamido-2-methylpropylsulfonic acid-maleic anhydride  
copolymer  
RL: SPN (Synthetic preparation); TEM (Technical or engineered  
material use); PREP (Preparation); USES (Uses)  
(prep. and application for scale inhibition)

L27 ANSWER 10 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN  
ACCESSION NUMBER: 1997:344285 HCAPLUS Full-text  
DOCUMENT NUMBER: 127:18526  
TITLE: Permanently antistatic aromatic polycarbonate  
compositions with good mechanical properties,  
heat stability, and moldability  
INVENTOR(S): Yoshida, Seiji  
PATENT ASSIGNEE(S): Mitsubishi Engineering Plastic K. K., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09087461	A2	19970331	JP 1995-247674	199509 26
PRIORITY APPLN. INFO.:				JP 1995-247674 199509 26

GI





AB Title compns. contain 50-99% arom. polycarbonates and 1-50% vinyl polymers comprising 2-100 mol% repeating units of (substituted) styrenesulfonic acid phosphonium I (R1-R4 = C1-18 aliph. hydrocarbyl, arom. hydrocarbyl, aralkyl, alkylallyl; X1, X2 = H, Cl, Br; Y1-Y4 = H, Cl, Br, C1-6 hydrocarbyl) and 0-98 mol% repeating units of vinyl monomers other than I. Thus, a compn. comprising Iupilon S-3000 (polycarbonate) 94.7, tetrabutylphosphonium styrenesulfonate homopolymer 5, and ADK Stab PEP-36 (heat stabilizer) 0.3% was melt kneaded, pelletized, and injection molded to give test pieces showing surface resistivity  $5.7 + 10^{13}$  initially and  $8.5 + 10^{13} \Omega/\text{cm}^2$  after water-wash.

IT 189354-17-4P

RL: IMF (Industrial manufacture); MOA (Modifier or additive use);

PRP (Properties); PREP (Preparation); USES (Uses)

(permanently antistatic arom. polycarbonate compns. contg.

styrenesulfonate-based polymers with good mech. properties, heat stability, and moldability)

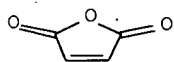
RN 189354-17-4 HCAPLUS

CN Phosphonium, tetrabutyl-, salt with ethenylbenzenesulfonic acid (1:1), polymer with 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

CRN 108-31-6

CMF C4 H2 O3



CM 2

CRN 124396-41-4

CMF C16 H36 P . C8 H7 O3 S

CM 3

CRN 50852-01-2

CMF C8 H7 O3 S

CCI IDS

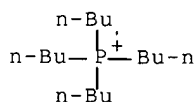


D1-CH=CH<sub>2</sub>

D1-SO<sub>3</sub><sup>-</sup>

CM 4

CRN 15853-37-9



IC ICM C08L041-00  
ICS C08L069-00  
CC 37-6 (Plastics Manufacture and Processing)  
IT 124396-45-8P 169599-56-8P 189354-12-9P 189354-15-2P  
189354-16-3P **189354-17-4P**  
RL: IMF (Industrial manufacture); MOA (Modifier or additive use);  
PRP (Properties); PREP (Preparation); USES (Uses)  
(permanently antistatic arom. polycarbonate compns. contg.  
styrenesulfonate-based polymers with good mech. properties, heat  
stability, and moldability)

L27 ANSWER 11 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1997:222524 HCAPLUS Full-text

DOCUMENT NUMBER: 126:278102

TITLE: Phosphosulfurized antiwear, extreme-pressure,  
and VI [viscosity index] polymer additives:  
synthesis, characterization and lubricant  
applications

AUTHOR(S): Keromest, C.; Durand, J.-P.; Born, M.; Gateau,  
P.; Tessier, M.; Marechal, E.

CORPORATE SOURCE: Institut francais du petrole, Rueil-Malmaison,  
92852, Fr.

SOURCE: Revue de l'Institut Francais du Petrole (1997),  
52(1), 35-44

CODEN: RFPTBH; ISSN: 0020-2274

PUBLISHER: Technip

DOCUMENT TYPE: Journal

LANGUAGE: French

AB Poly(alkyl methacrylates) (PMA) and a maleated ethylene/propylene copolymer  
(OCP), usable both as lubricant VI improver and antiwear extreme-pressure (AW-  
EP) additives, were prepd. by introducing AW-EP functional moieties on PMA and  
OCP backbones under the form of dialkyl dithiophosphates; mech. performances  
of these polymers were pre-assessed by means of a four-ball machine.

IT **189020-46-0P**

RL: SPN (Synthetic preparation); TEM (Technical or engineered  
material use); PREP (Preparation); USES (Uses)  
(prepn. of antiwear, extreme-pressure, and viscosity index  
polymer additives)

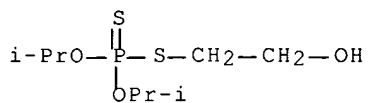
RN 189020-46-0 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, dodecyl ester, polymer with  
2,5-furandione and octadecyl 2-methyl-2-propenoate,  
2-[[bis(1-methylethoxy)phosphinothioyl]thio]ethyl ester (9CI) (CA  
INDEX NAME)

CM 1

CRN 116990-62-6

CMF C8 H19 O3 P S2



CM 2

CRN 109856-32-8

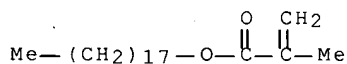
CMF (C22 H42 O2 . C16 H30 O2 . C4 H2 O3)x

CCI PMS

CM 3

CRN 32360-05-7

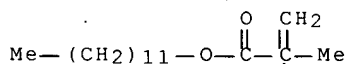
CMF C22 H42 O2



CM 4

CRN 142-90-5

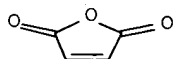
CMF C16 H30 O2



CM 5

CRN 108-31-6

CMF C4 H2 O3



CC 37-3 (Plastics Manufacture and Processing)

Section cross-reference(s): 38, 51

IT 108-31-6DP; 2,5-Furandione, reaction products with ethylene-propylene copolymers, diisopropyldithiophosphorylethyl esters, preparation 9010-79-1DP, Ethylene-propylene copolymer, maleated, diisopropyldithiophosphorylethyl esters 188958-58-9P **189020-46-0P**

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(prepn. of antiwear, extreme-pressure, and viscosity index

polymer additives)

L27 ANSWER 12 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1991:537554 HCAPLUS Full-text

DOCUMENT NUMBER: 115:137554

TITLE: Adherent compositions showing excellent adhesion  
on attaching resin moldings to the sidewalls of  
automobile bodies

INVENTOR(S): Murachi, Tatsuya

PATENT ASSIGNEE(S): Toyoda Gosei Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	---	---	-----	
JP 03045684	A2	19910227	JP 1989-181499	198907 13
PRIORITY APPLN. INFO.:				JP 1989-181499 198907 13

AB Title compns. contain acrylic self-adhesives 100, isocyanuric acid (I) 0.012-130, and polyisocyanates 0.005-550 parts. Thus, 100 parts (as solid) a soln. (solid content 37%) of Bu acrylate-maleic anhydride copolymer (acid value 20-25) in a 1:1:1 cyclohexane-Et acetate-toluene mixed solvent was mixed with 0.013 part I and 0.0444 part isophorone diisocyanate (II) at normal temp. to prep. an adherent compn., which was applied to the one side of a polyethylene foam tape (expansion ratio 2), dried at 100° for 2 min, pasted on an acrylic paint-applied steel plate, and kept at room temp. for 20 days to show tensile shear strength 3.4 kg/cm<sup>2</sup> (rate of pulling 30 mm/min), vs. 0.21 kg/cm<sup>2</sup> for a compn. when 193.5 parts I and 33.3 parts II were similarly used.

IT 136261-84-2

RL: USES (Uses)

(adhesives, with good adhesion, for attaching resin moldings to  
side walls of automobile bodies)

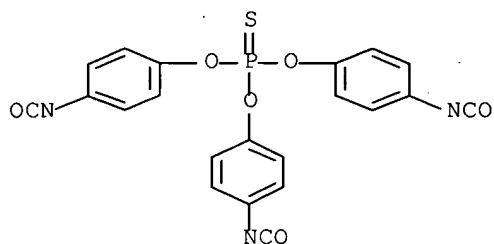
RN 136261-84-2 HCAPLUS

CN 2-Propenoic acid, butyl ester, polymer with 2,5-furandione,  
1,3,5-triazine-2,4,6(1H,3H,5H)-trione and O,O,O-tris(4-  
isocyanatophenyl) phosphorothioate (9CI) (CA INDEX NAME)

CM 1

CRN 4151-51-3

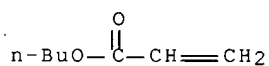
CMF C21 H12 N3 O6 P S



CM 2

CRN 141-32-2

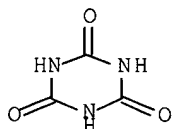
CMF C7 H12 O2



CM 3

CRN 108-80-5

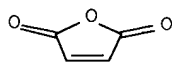
CMF C3 H3 N3 O3



CM 4

CRN 108-31-6

CMF C4 H2 O3



IC ICM C09J175-04

ICA C08G018-38; C08G018-62

CC 37-6 (Plastics Manufacture and Processing)

IT 136261-78-4 136261-79-5 136261-80-8 136261-81-9 136261-82-0

136261-83-1 **136261-84-2** 136261-85-3 136261-86-4

136261-87-5

RL: USES (Uses)

(adhesives, with good adhesion, for attaching resin moldings to side walls of automobile bodies)

L27 ANSWER 13 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN  
 ACCESSION NUMBER: 1991:409613 HCAPLUS Full-text  
 DOCUMENT NUMBER: 115:9613  
 TITLE: Preparation and use of hydrophilic, swellable  
 graft copolymers  
 INVENTOR(S): Engelhardt, Friedrich; Riegel, Ulrich;  
 Kuehlwein, Juergen  
 PATENT ASSIGNEE(S): Cassella A.-G., Germany  
 SOURCE: Ger. Offen., 9 pp.  
 CODEN: GWXXBX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO. -----	KIND ----	DATE -----	APPLICATION NO. -----	DATE
DE 3910563	A1	19901004	DE 1989-3910563	198904 01
EP 391108	A2	19901010	EP 1990-104995	199003 16
EP 391108	A3	19920108		
EP 391108	B1	19950118		
R: BE, CH, DE, DK, ES, FR, GB, IT, LI, NL, SE				
US 5041496	A	19910820	US 1990-495642	199003 19
FI 97474	B	19960913	FI 1990-1385	199003 20
FI 97474	C	19961227		
CA 2013441	AA	19901001	CA 1990-2013441	199003 30
CA 2013441	C	20001010		
JP 03163119	A2	19910715	JP 1990-81477	199003 30

PRIORITY APPLN. INFO.: DE 1989-3910563 A  
 198904  
 01

AB The title polymers, useful as absorbents for H<sub>2</sub>O or aq. solns., contain 0.5-20% groups X[OC(R<sub>1</sub>)CH<sub>2</sub>O]<sub>n</sub>COZCO<sub>2</sub>[C(R<sub>1</sub>)CH<sub>2</sub>O]<sub>m</sub>zX [R<sub>1</sub> = H, Me; X = H, COZCO<sub>2</sub>H; Z = C<sub>1</sub>-6 alk(en)ylene, (sulfo)phenylene; m, n = 2-300; z = 1-100], 79-99% groups -CH(R<sub>4</sub>)C(R<sub>2</sub>)(R<sub>3</sub>)- [R<sub>2</sub> = H, Me, Et; R<sub>3</sub> = CO<sub>2</sub>H, SO<sub>3</sub>H, or phosphonyl group or their esters; R<sub>4</sub> = H, Me, Et, CO<sub>2</sub>H], and 0.1-2% crosslinker. A polyester (I) (OH no. 53, acid no. ≤1) was prepd. from polyethylene glycol 1.35, 1,2-propanediol 6.75, and di-Me terephthalate 4.05 mol. Emulsion polymn. of 100 g I with 1888 g acrylic acid (as the Na salt) and 12 g trimethylolpropane triacrylate gave a graft polymer showing good fluid retention when used in diapers.

IT 134337-90-9 134337-92-1

RL: USES (Uses)

(absorbents, for water, manuf. of)

RN 134337-90-9 HCAPLUS

CN 2-Propenoic acid, polymer with bis[(1-oxo-2-propenyl)amino]acetic acid, ethenylphosphonic acid, 2,5-furandione,  $\alpha$ -hydro- $\omega$ -hydroxypoly(oxy-1,2-ethanediyl) and 2-methyl-2-[(1-oxo-2-propenyl)amino]-1-propanesulfonic acid, sodium salt, graft (9CI)  
(CA INDEX NAME)

CM 1

CRN 134337-89-6

CMF (C8 H10 N2 O4 . C7 H13 N O4 S . C4 H2 O3 . C3 H4 O2 . C2 H5 O3  
P . (C2 H4 O)n H2 O)x

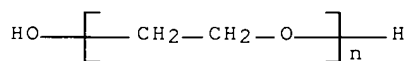
CCI PMS

CM 2

CRN 25322-68-3

CMF (C2 H4 O)n H2 O

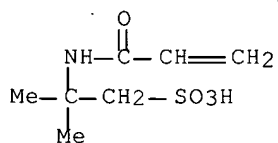
CCI PMS



CM 3

CRN 15214-89-8

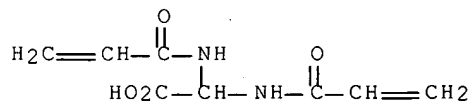
CMF C7 H13 N O4 S



CM 4

CRN 4387-85-3

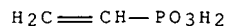
CMF C8 H10 N2 O4



CM 5

CRN 1746-03-8

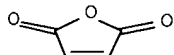
CMF C2 H5 O3 P



CM 6

CRN 108-31-6

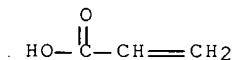
CMF C4 H2 O3



CM 7

CRN 79-10-7

CMF C3 H4 O2



RN 134337-92-1 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, polymer with bis[(1-oxo-2-propenyl)amino]acetic acid, ethyl hydrogen ethenylphosphonate, 2,5-furandione,  $\alpha$ -hydro- $\omega$ -hydroxypoly(oxy-1,2-ethanediyl),  $\alpha$ -hydro- $\omega$ -hydroxypoly[oxy(methyl-1,2-ethanediyl)], 2-methyl-2-[(1-oxo-2-propenyl)amino]-1-propanesulfonic acid and 2-propenoic acid, sodium salt, graft (9CI) (CA INDEX NAME)

CM 1

CRN 134337-91-0

CMF (C8 H10 N2 O4 . C7 H13 N O4 S . C4 H9 O3 P . C4 H6 O2 . C4 H2 O3 . (C3 H6 O)n H2 O . C3 H4 O2 . (C2 H4 O)n H2 O)x

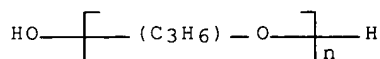
CCI PMS

CM 2

CRN 25322-69-4

CMF (C3 H6 O)n H2 O

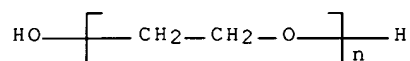
CCI IDS, PMS



CM 3

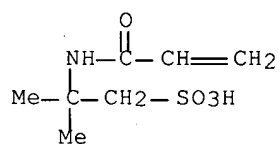


CRN 25322-68-3  
 CMF (C2 H4 O)<sub>n</sub> H2 O  
 CCI PMS



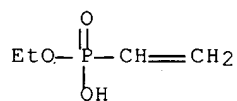
CM 4

CRN 15214-89-8  
 CMF C7 H13 N O4 S



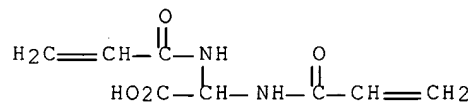
CM 5

CRN 4546-13-8  
 CMF C4 H9 O3 P



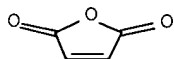
CM 6

CRN 4387-85-3  
 CMF C8 H10 N2 O4



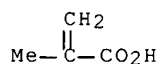
CM 7

CRN 108-31-6  
 CMF C4 H2 O3



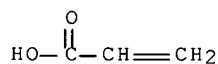
CM 8

CRN 79-41-4  
CMF C4 H6 O2



CM 9

CRN 79-10-7  
CMF C3 H4 O2



IC ICM C08F283-06  
ICS C02F001-28; A61F013-15; A61F013-20; A61L015-22  
ICA C08F283-02  
ICI C08F283-00, C08F220-06, C08F220-58, C08F222-02, C08F228-02, C08F230-02  
CC 35-4 (Chemistry of Synthetic High Polymers)  
Section cross-reference(s): 63  
IT 134337-65-8 134337-68-1 134337-70-5 134337-72-7 134337-74-9  
134337-76-1 134337-78-3 134337-80-7 134337-82-9 134337-84-1  
134337-86-3 134337-88-5 **134337-90-9 134337-92-1**  
134337-94-3 134337-96-5 134337-98-7 134338-00-4 134338-02-6  
134338-04-8 134417-73-5 134451-16-4  
RL: USES (Uses)  
(absorbents, for water, manuf. of)

L27 ANSWER 14 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN  
ACCESSION NUMBER: 1988:95492 HCAPLUS Full-text  
DOCUMENT NUMBER: 108:95492  
TITLE: Self-crosslinkable thermosetting resins for molding or casting materials and adhesives  
INVENTOR(S): Tagoshi, Hirotaka; Endo, Takeshi; Yoshida, Haruo  
PATENT ASSIGNEE(S): Showa Denko K. K., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 62192412	A2	19870824	JP 1986-33794	19860220

PRIORITY APPLN. INFO.:

JP 1986-33794

19860220

GI For diagram(s), see printed CA Issue.

AB Title resins are prepd. from spiroorthoesters I 1-99.9, electron-withdrawing group-bearing vinyl monomers 0-98.9, and sulfonium compds. II (R = H, Me; X = SbF<sub>6</sub>, AsF<sub>6</sub>, PF<sub>6</sub>, BF<sub>4</sub>; m = 3-5) 0.1-20 mol%. Thus, spiroorthoester I (m = 5) 0.530, acrylonitrile 0.167, and a mixt. of m/p-sulfonium salt II (X = SbF<sub>6</sub>) 0.305 g were polymd. using AIBN at 60° for 24 h to give a polymer with d. 1.343 which was stable at room temp. for .apprx.6 mo. Dissolving 0.5 g the polymer into 1 mL MeCN, and heating at 120° for 10 h gave crosslinked product with d. 1.331.

IT 112783-68-3

RL: USES (Uses)

(self-crosslinkable, shrinkproof thermoset with good storage stability)

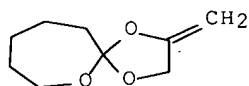
RN 112783-68-3 HCAPLUS

CN Thiophenium, 1-[(4-ethenylphenyl)methyl]tetrahydro-, hexafluorophosphate(1-), polymer with 2,5-furandione and 2-methylene-1,4,6-trioxaspiro[4.6]undecane (9CI) (CA INDEX NAME)

CM 1

CRN 78067-30-8

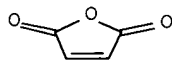
CMF C9 H14 O3



CM 2

CRN 108-31-6

CMF C4 H2 O3



CM 3

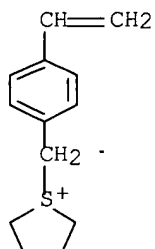
CRN 112760-73-3

CMF C13 H17 S . F6 P

CM 4

CRN 106311-34-6

CMF C13 H17 S

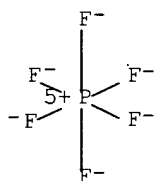


CM 5

CRN 16919-18-9

CMF F6 P

CCI CCS



IC ICM C08F216-38

ICS C08F212-14

CC 37-3 (Plastics Manufacture and Processing)

Section cross-reference(s): 38

IT 112760-88-0 112760-89-1 112760-90-4 112760-91-5 112760-92-6

112760-93-7 112760-94-8 112760-95-9 112760-96-0 112760-97-1

112760-98-2 112760-99-3 112761-00-9 112761-01-0

112783-68-3

RL: USES (Uses)

(self-crosslinkable, shrinkproof thermoset with good storage stability)

L27 ANSWER 15 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1988:95491 HCAPLUS Full-text

DOCUMENT NUMBER: 108:95491

TITLE: Self-crosslinkable thermosetting resins for molding or casting materials and adhesives

INVENTOR(S): Tagoshi, Hirotaka; Endo, Takeshi; Yoshida, Haruo

PATENT ASSIGNEE(S): Showa Denko K. K., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

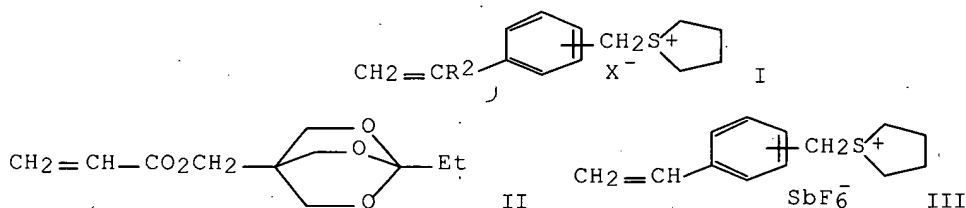
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 62192415	A2	19870824	JP 1986-33792	19860220

PRIORITY APPLN. INFO.:

JP 1986-33792

19860220

GI



AB Title resins are prepd. from 0-98.9 mol % ethylenic unsatd. monomers, 1-99.9 mol % CH<sub>2</sub>:CR<sub>2</sub>CO<sub>2</sub>R<sub>1</sub> (R = H, Me; R<sub>1</sub> = terminal bicycloorthoeester-contg. alkylene), and 0.1-20 mol % I (R<sub>2</sub> = H, Me; X = SbF<sub>6</sub>, AsF<sub>6</sub>, BF<sub>4</sub>). Bicycloorthoeester II 0.535, Me methacrylate 0.235, and mixt. of m-/p-sulfonium salt III 0.230 g were polymd. using AIBN at 70° for 24 h to give a polymer with d. 1.317 and intrinsic viscosity 0.26 at 84% yield. Dissolving 0.5 g the polymer in 1 mL MeCN, and heating at 120° for 10 h gave crosslinked product with d. 1.301. The polymer could be heat set even after 6 mo at room temp.

IT 112760-74-4P

RL: PREP (Preparation)

(self-crosslinkable, shrinkproof, storage-stable, manuf. of)

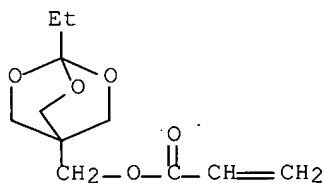
RN 112760-74-4 HCAPLUS

CN Thiophenium, 1-[(4-ethenylphenyl)methyl]tetrahydro-, hexafluorophosphate(1-), polymer with (1-ethyl-2,6,7-trioxabicyclo[2.2.2]oct-4-yl)methyl 2-propenoate and 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

CRN 82837-04-5

CMF C11 H16 O5



CM 2

CRN 108-31-6

CMF C4 H2 O3



CM 3

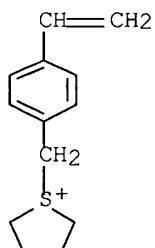
CRN 112760-73-3

CMF C13 H17 S . F6 P

CM 4

CRN 106311-34-6

CMF C13 H17 S

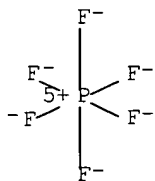


CM 5

CRN 16919-18-9

CMF F6 P

CCI CCS



IC ICM C08F220-28

ICS C08F220-28

ICA C08F212-14

ICI C08F220-28, C08F212-14

CC 37-3 (Plastics Manufacture and Processing)

IT 112760-66-4P 112760-69-7P 112760-70-0P 112760-71-1P

112760-72-2P 112760-74-4P 112760-76-6P 112760-77-7P

112760-78-8P 112760-80-2P 112760-81-3P 112760-82-4P  
 112760-83-5P 112760-84-6P 112760-85-7P 112760-86-8P  
 112760-87-9P 112783-67-2P

RL: PREP (Preparation)

(self-crosslinkable, shrinkproof, storage-stable, manuf. of)

L27 ANSWER 16 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1984:424128 HCAPLUS Full-text

DOCUMENT NUMBER: 101:24128

TITLE: Continuous copolymerization of monoethylenic unsaturated mono- and dicarboxylic acids

INVENTOR(S): Denzinger, Walter; Hartmann, Heinrich; Trieselt, Wolfgang; Hettche, Albert; Schneider, Rolf; Raubenheimer, Hans Juergen

PATENT ASSIGNEE(S): BASF A.-G. , Fed. Rep. Ger.

SOURCE: Ger. Offen., 15 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO. -----	KIND ----	DATE -----	APPLICATION NO. -----	DATE
DE 3233778	A1	19840315	DE 1982-3233778	198209 11
EP 106111	A1	19840425	EP 1983-108754	198309 06
EP 106111	B1	19871209		
R: AT, BE, CH, DE, FR, GB, IT, LI, NL, SE				
AT 31318	E	19871215	AT 1983-108754	198309 06
ES 525511	A1	19840601	ES 1983-525511	198309 08
JP 59066407	A2	19840414	JP 1983-165294	198309 09
JP 02057804	B4	19901206		
CA 1241490	A1	19880830	CA 1983-436435	198309 09
US 4725655	A	19880216	US 1986-919583	198610 16
PRIORITY APPLN. INFO.:			DE 1982-3233778	A 198209 11
			EP 1983-108754	A 198309 06
			US 1983-530476	A1 198309 08

US 1984-674370

A1

198411  
26

US 1985-730262

A1

198505  
06

US 1985-811326

A1

198512  
19

OTHER SOURCE(S):

MARPAT 101:24128

AB In the title process, 10-60% unsatd. C4-6 dicarboxylic acid, anhydride, or salt is polymd. continuously with 40-90% unsatd. C3-10 monocarboxylic acid or salt (total acids 20-80% neutralized) and 0-20% comonomer in aq. medium at 60-150° in a reactor cascade. Thus, adding a soln. of maleic anhydride 72.3, acrylic acid 150, and H2O 153.4 parts, a soln. of 28.5 parts 30% H2O2 and 56 parts H2O, and a soln. of 85 parts NaOH in 225 parts H2O to the 1st of 3 reactors (all at 100°) and 100 parts 50% aq. acrylic acid to the 2nd gave a 37% soln. of copolymer [52255-49-9] with K-value (2% aq. soln., fully neutralized) 46 and unreacted maleic acid content 0.76%.

IT 90718-01-7P

RL: IMF (Industrial manufacture); PREP (Preparation)  
(manuf. of, by continuous polymn.)

RN 90718-01-7 HCAPLUS

CN 2-Propenoic acid, polymer with ethenesulfonic acid, ethenyl acetate, ethenylphosphonic acid, 2,5-furandione and 2-hydroxyethyl 2-propenoate, sodium salt (9CI) (CA INDEX NAME)

CM 1

CRN 90718-00-6

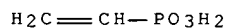
CMF (C5 H8 O3 . C4 H6 O2 . C4 H2 O3 . C3 H4 O2 . C2 H5 O3 P . C2 H4  
O3 S)x

CCI PMS

CM 2

CRN 1746-03-8

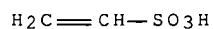
CMF C2 H5 O3 P



CM 3

CRN 1184-84-5

CMF C2 H4 O3 S

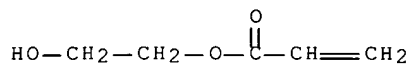




CM 4

CRN 818-61-1

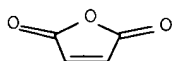
CMF C5 H8 O3



CM 5

CRN 108-31-6

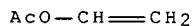
CMF C4 H2 O3



CM 6

CRN 108-05-4

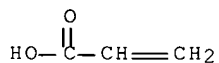
CMF C4 H6 O2



CM 7

CRN 79-10-7

CMF C3 H4 O2



IC C08F220-04; C08F222-02; C08F002-00; C08F008-44

CC 35-4 (Chemistry of Synthetic High Polymers)

IT 26099-88-7P 52255-49-9P 60472-42-6P 90717-97-8P 90717-99-0P

90718-01-7P 90718-03-9P

RL: IMF (Industrial manufacture); PREP (Préparation)  
(manuf. of, by continuous polymn.)

L27 ANSWER 17 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1980:568642 HCAPLUS Full-text

DOCUMENT NUMBER: 93:168642

TITLE: Preparations and chelation properties of  
ethyl-(p-vinylphenyl)phosphoric acid or  
ethyl-(p-vinylphenyl)thiophosphoric acid polymer

and copolymer  
 AUTHOR(S): Furukawa, Junji; Kobayashi, Eiichi; Wakui, Tadahiro  
 CORPORATE SOURCE: Dep. Ind. Chem., Sci. Univ. Tokyo, Noda, 278, Japan  
 SOURCE: Polymer Journal (Tokyo, Japan) (1980), 12(5), 293-303  
 CODEN: POLJB8; ISSN: 0032-3896  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB p-Hydroxystyrene [2628-17-3] is used with EtOP(O)Cl<sub>2</sub> [1498-51-7] or EtOP(S)Cl<sub>2</sub> [1498-64-2] to prep. p-(H<sub>2</sub>C:CH)C<sub>6</sub>H<sub>4</sub>OP(O)(OEt)Cl (I) [73970-22-6] and p-(H<sub>2</sub>C:CH)C<sub>6</sub>H<sub>4</sub>OP(S)(OEt)Cl (II) [73970-24-8]. I and II are homopolymd. and copolymd. with styrene, Me methacrylate (reactivity ratios detd.), or maleic anhydride (III) to prep. glassy transparent polymers. Alternating copolymers are obtained from I and III or II and III. The polymers are hydrolyzed and evaluated as chelating agents for Hg<sup>2+</sup>, UO<sub>2</sub><sup>2+</sup>, Cu<sup>2+</sup>, Co<sup>2+</sup>, Fe<sup>3+</sup>, and Ca<sup>2+</sup> ions. The chelating capacities of the polymers are low in dil. solns. of the ions.

IT 73970-25-9DP, hydrolyzed  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (prepn. and chelation of heavy metals by)

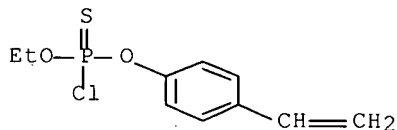
RN 73970-25-9 HCAPLUS

CN Phosphorochloridithioic acid, O-(4-ethenylphenyl) O-ethyl ester, polymer with 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

CRN 73970-24-8

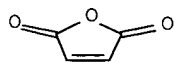
CMF C10 H12 Cl O2 P S



CM 2

CRN 108-31-6

CMF C4 H2 O3



IT 73970-25-9P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (prepn. of)

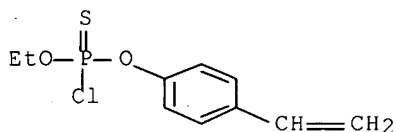
RN 73970-25-9 HCAPLUS

CN Phosphorochloridithioic acid, O-(4-ethenylphenyl) O-ethyl ester, polymer with 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

CRN 73970-24-8

CMF C10 H12 Cl O2 P S



CM 2

CRN 108-31-6

CMF C4 H2 O3



CC 35-1 (Synthetic High Polymers)

Section cross-reference(s): 25

IT 73970-23-7DP, hydrolyzed **73970-25-9DP**, hydrolyzed  
74721-69-0DP, hydrolyzed 75280-88-5DP, hydrolyzed 75280-89-6DP,  
hydrolyzed 75280-90-9DP, hydrolyzed 75280-91-0DP, hydrolyzed  
75280-92-1DP, hydrolyzed  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);  
RACT (Reactant or reagent)

(prepn. and chelation of heavy metals by)

IT 73970-23-7P **73970-25-9P** 74721-69-0P 75280-88-5P  
75280-89-6P 75280-90-9P 75280-91-0P 75280-92-1P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

L27 ANSWER 18 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1980:495967 HCAPLUS Full-text

DOCUMENT NUMBER: 93:95967

TITLE: Phosphorus-containing polystyrene derivatives as  
flame resistance

AUTHOR(S): Furukawa, Junji; Kobayashi, Eiichi; Wakui,  
Tadahiro

CORPORATE SOURCE: Dep. Ind. Chem., Sci. Univ. Tokyo, Noda, 278,  
Japan

SOURCE: Polymer Journal (Tokyo, Japan) (1980), 12(5),  
277-85

CODEN: POLJB8; ISSN: 0032-3896

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Di-Et p-vinylphenyl phosphite (I) [72909-42-3] and di-Et p-vinylphenyl  
thiophosphate (II) [72909-41-2] can be prepd. from Na p-vinylphenoxide  
[72909-40-1]. Their copolymers with vinyl monomers are glassy solids that are  
flame resistant. The copolymers with maleic anhydride are alternating. The

flame resistance was better for I-contg. polymers than for II-contg. polymers. The flame resistance of the copolymers was not always higher than that of mixts. of the homopolymers.

IT 74508-37-5P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

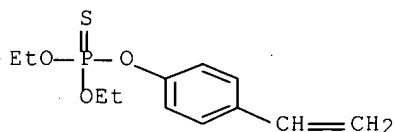
RN 74508-37-5 HCAPLUS

CN Phosphorothioic acid, O-(4-ethenylphenyl) O,O-diethyl ester, polymer with 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

CRN 72909-41-2

CMF C12 H17 O3 P S



CM 2

CRN 108-31-6

CMF C4 H2 O3



CC 36-3 (Plastics Manufacture and Processing)

IT 58555-67-2P 74508-34-2P 74508-37-5P 74508-41-1P  
74508-43-3P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. of)

L27 ANSWER 19 OF 19 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1980:408715 HCAPLUS Full-text

DOCUMENT NUMBER: 93:8715

TITLE: Collection of heavy metals with water soluble  
chelate polymers

AUTHOR(S): Kobayashi, Eiichi; Furukawa, Junji

CORPORATE SOURCE: Tokyo Sci. Univ., Tokyo, Japan

SOURCE: Kankyo Kagaku Tokubetsu Kenkyu Shinpojumu  
Yoshishu (1979), Volume 1, 10-13. Kyoto Daigaku  
Kogakubu: Kyoto, Japan.  
CODEN: 43AZAE

DOCUMENT TYPE: Conference

LANGUAGE: Japanese

AB Hydrolyzed Et 4-vinylphenyl phosphorothiochloridate-maleic anhydride copolymer selectively chelated Hg<sup>2+</sup> at pH 3. Alternating copolymers of maleic anhydride with furan, thiophene, N-vinylsuccinimide, Et 4-vinylphenyl

phosphorochloridate, and Et 4-vinylphenyl phosphorothiochloridate were prepd. and hydrolyzed to give water-sol. chelating polymers.

IT 73970-25-9D, hydrolyzed

RL: USES (Uses)

(alternating, heavy metal chelation by)

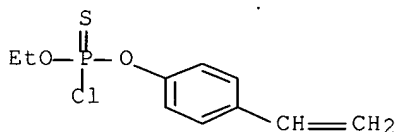
RN 73970-25-9 HCAPLUS

CN Phosphorochloridothioic acid, O-(4-ethenylphenyl) O-ethyl ester, polymer with 2,5-furandione (9CI) (CA INDEX NAME)

CM 1

CRN 73970-24-8

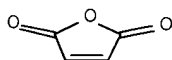
CMF C10 H12 Cl O2 P S



CM 2

CRN 108-31-6

CMF C4 H2 O3



CC 35-6 (Synthetic High Polymers)

Section cross-reference(s): 60

IT 27026-41-1D, hydrolyzed 27275-33-8D, hydrolyzed 33031-81-1D,  
hydrolyzed 73970-23-7D, hydrolyzed 73970-25-9D,  
hydrolyzed 73970-26-0D, hydrolyzed

RL: USES (Uses)

(alternating, heavy metal chelation by)

=> d l31 ibib abs hitstr hitind 1-5

L31 ANSWER 1 OF 5 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:216421 HCAPLUS Full-text

DOCUMENT NUMBER: 142:262346

TITLE: Production of electric insulators by curing epoxy resins containing reactive modifiers

INVENTOR(S): Amirova, L. M.; Magsumova, A. F.; Amirov, R. R.;  
Ganiev, M. M.; Shayakhmetova, A. R.

PATENT ASSIGNEE(S): Kazanskii Gosudarstvennyi Tekhnicheskii  
Universitet im. A. N. Tupoleva KGTU im. A. N.  
Tupoleva, Russia

SOURCE: Russ., No pp. given

CODEN: RUXXE7

DOCUMENT TYPE: Patent

LANGUAGE: Russian  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
RU 2247752	C1	20050310	RU 2003-129751	20031006
PRIORITY APPLN. INFO.:				20031006
				RU 2003-129751

AB An elec. insulating compd. is produced by mixing bisphenol A epoxy resin having a mol. wt. of 1,000-6,000 (45-55) and a phosphorus-contg. reactive modifier (100 parts) at 50-60°, followed by adding a stoichiometric amt. of an arom. diamine, the phosphorus-contg. modifier being triglycidyl phosphate, diglycidyl Me phosphate, or diglycidyl methylphosphonate, and the arom. diamine being selected from 4,4'-diaminodiphenylmethane, 4,4'-diaminodiphenylsulfone, and 4,4'-diaminodiphenyl oxide. The compn. has reduced viscosity, improved dielec. properties, and can be used for impregnation of high-voltage and low-voltage components of elec. devices, transformers, and choke coils.

IT 845858-48-2P 845858-50-6P 845858-55-1P

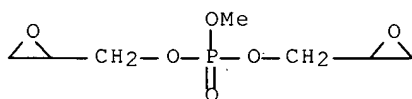
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(prodn. of elec. insulators by curing epoxy resins contg. reactive modifiers)

RN 845858-48-2 HCAPLUS

CN Phosphoric acid, methyl bis(oxiranylmethyl) ester, polymer with (chloromethyl)oxirane, 4,4'-(1-methylethylidene)bis[phenol] and 4,4'-sulfonylbis[benzenamine] (9CI) (CA INDEX NAME)

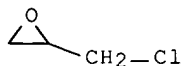
CM 1

CRN 17167-20-3  
CMF C7 H13 O6 P



CM 2

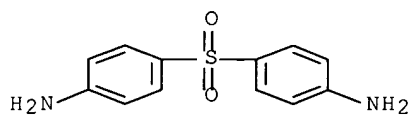
CRN 106-89-8  
CMF C3 H5 Cl O



CM 3

CRN 80-08-0

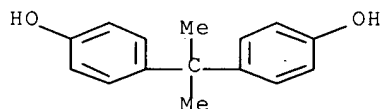
CMF C12 H12 N2 O2 S



CM 4

CRN 80-05-7

CMF C15 H16 O2



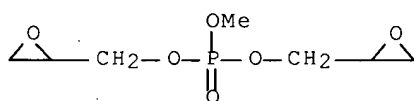
RN 845858-50-6 HCAPLUS

CN Phosphoric acid, methyl bis(oxiranylmethyl) ester, polymer with  
2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane  
& 4,4'-sulfonylbis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 17167-20-3

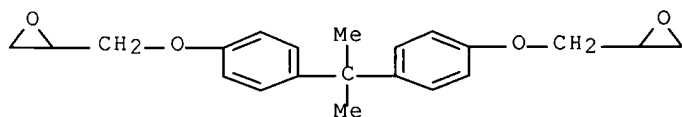
CMF C7 H13 O6 P



CM 2

CRN 1675-54-3

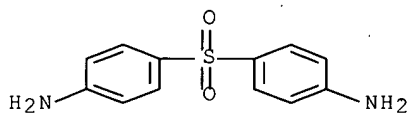
CMF C21 H24 O4



CM 3

CRN 80-08-0

CMF C12 H12 N2 O2 S



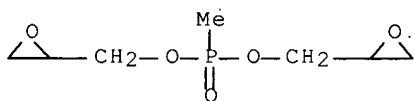
RN 845858-55-1 HCAPLUS

CN Phosphonic acid, methyl-, bis(oxiranylmethyl) ester, polymer with E 45 (epoxy resin) and 4,4'-sulfonylbis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 77375-34-9

CMF C7 H13 O5 P



CM 2

CRN 64236-77-7

CMF Unspecified

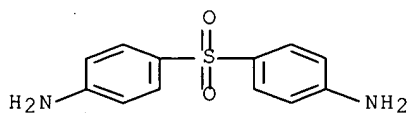
CCI MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 3

CRN 80-08-0

CMF C12 H12 N2 O2 S



IC ICM C08G059-14

ICS H01B003-40; C09D163-02; C09J163-02; C09K021-12

CC 37-6 (Plastics Manufacture and Processing)



Section cross-reference(s): 76

IT 101-77-9DP, 4,4'-Diaminodiphenylmethane, reaction products with epoxy alkyd resins and triglycidyl phosphate or diglycidyl methylphosphonate 18795-33-0DP, Triglycidyl phosphate, reaction products with epoxy alkyd resins and arom. amines 77375-34-9DP, Diglycidyl methylphosphonate, reaction products with epoxy alkyd resins and arom. diamines 845858-47-1P **845858-48-2P** 845858-49-3P **845858-50-6P** 845858-51-7P 845858-52-8P 845858-53-9P 845858-54-0P **845858-55-1P** 845858-56-2P  
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (prodn. of elec. insulators by curing epoxy resins contg. reactive modifiers)

L31 ANSWER 2 OF 5 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1996:694377 HCAPLUS Full-text

DOCUMENT NUMBER: 125:330533

TITLE: ) Non-flammable polyamides prepared from polyamides and phosphorus-containing epoxides

INVENTOR(S): Von Gentzkow, Wolfgang

PATENT ASSIGNEE(S): Siemens A.-G., Germany

SOURCE: PCT Int. Appl., 16 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

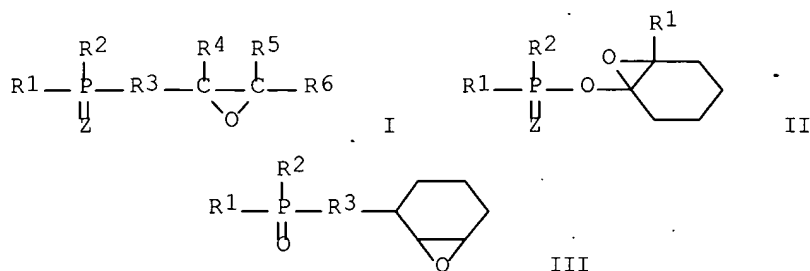
LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO. -----	KIND ----	DATE -----	APPLICATION NO. -----	DATE
WO 9630441	A1	19961003	WO 1996-DE465	199603 15
W: CN, JP, KR, US				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
EP 817812	A1	19980114	EP 1996-905736	199603 15
R: CH, DE, FR, GB, IT, LI, NL				
CN 1179168	A	19980415	CN 1996-192796	199603 15
JP 11502554	T2	19990302	JP 1996-528760	199603 15
US 5942584	A	19990824	US 1997-930521	199709 29
PRIORITY APPLN. INFO.:			DE 1995-19512175	A 199503 31
			WO 1996-DE465	W 199603 15

GI



AB Non-flammable polyamide compns. are prepd. from a polyamide, a copolyamide, or a polyamide blend by high-temp. reaction with a mono-epoxy phosphorus compd. of general structures I, II, or III [Z = O or S; R1,R2 = alkyl, O- or S-C1-4-alkyl, OPh, SPh, naphthyl, O-naphthyl, benzyl, or O-benzyl; R3 is a single bond, O, C1-4-alkylene, phenylene, or O- or S-C1-4-alkylene or O-phenylene (O or S bound to P); R4,R5,R6 = H, C1-4-alkyl, C1-4-hydroxyalkyl Ph, or benzyl (optionally, R5 or R6 can be -R3-P(:O)R1R2)], in which the content of the P compd. is present at the 5-35 wt.% level. Addnl. additives (e.g., fillers, glass fibers, and halogen-free flame retardants) can be added to the polymer-epoxy material. Suitable halogen-free flame retardants include melamine cyanurate, melamine phosphate, or Mg(OH)2. The compns. are esp. suitable for use in insulating, building, and housing materials.

IT 183314-89-8P

RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(non-flammable and flame-resistant polyamides prepd. from polyamides and phosphorus-contg. epoxides)

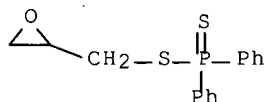
RN 183314-89-8 HCAPLUS

CN Phosphinodithioic acid, diphenyl-, oxiranylmethyl ester, polymer with hexahydro-2H-azepin-2-one (9CI) (CA INDEX NAME)

CM 1

CRN 183314-88-7

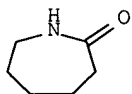
CMF C15 H15 O P S2



CM 2

CRN 105-60-2

CMF C6 H11 N O



IC. ICM C08K005-51  
ICS C08K005-5398; C08L077-00; C08K005-521; C08K005-529;  
C08K005-5397; C08G069-48

CC 37-6 (Plastics Manufacture and Processing)

IT Fire-resistant materials  
(**dielec.**, non-flammable and flame-resistant polyamides  
prepd. from polyamides and phosphorus-contg. epoxides)

IT Building materials  
Electric insulators and **Dielectrics**  
Thermal insulators  
(fire-resistant, non-flammable and flame-resistant polyamides  
prepd. from polyamides and phosphorus-contg. epoxides)

IT 183314-80-9P 183314-81-0P 183314-82-1P 183314-84-3P  
183314-85-4P 183314-86-5P 183314-87-6P **183314-89-8P**  
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP  
(Properties); SPN (Synthetic preparation); PREP (Preparation); USES  
(Uses)  
(non-flammable and flame-resistant polyamides prepd. from  
polyamides and phosphorus-contg. epoxides)

L31 ANSWER 3 OF 5 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1994:484697 HCAPLUS Full-text

DOCUMENT NUMBER: 121:84697

TITLE: Synthesis and properties of inorganic-organic  
resins with di-aminotetraorganocyclotriphosphaze  
nes and epoxy resin

AUTHOR(S): Kajiwara, M.

CORPORATE SOURCE: Dep. Appl. Chem., Nagoya Univ., Nagoya, 464-01,  
Japan

SOURCE: Journal of Materials Science Letters (1994),  
13(11), 842-5  
CODEN: JMSLD5; ISSN: 0261-8028

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The title cured epoxy resins were obtained by curing the bisphenol A-based  
epoxy resin Epikote 828 (I) with diaminotetraphenoxycyclotriphosphazene or  
with other diaminotetraorganocyclotriphosphazenes, and their chem. resistance,  
mech. properties, **dielec.** properties, and flammability was compared to I cured  
with ethylenediamine, hexamethylenediamine, and o-, m-, and p-  
phenylenediamine.

IT **108455-11-4P**  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and physicomech. and **dielec.** properties and  
chem. resistance and flammability of)

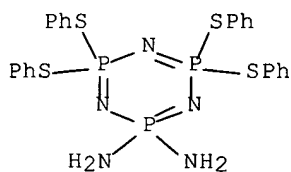
RN 108455-11-4 HCAPLUS

CN Phenol, 4,4'-(1-methylethylidene)bis-, polymer with  
(chloromethyl)oxirane and 2,2-diamino-2,2,4,4,6,6-hexahydro-4,4,6,6-  
tetrakis(phenylthio)-1,3,5,2,4,6-triazatriphosphorine (9CI) (CA  
INDEX NAME)

CM 1

CRN 77865-61-3

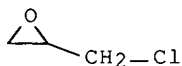
CMF C24 H24 N5 P3 S4



CM 2

CRN 106-89-8

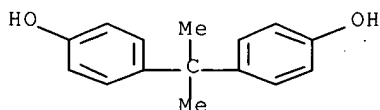
CMF C3 H5 Cl O



CM 3

CRN 80-05-7

CMF C15 H16 O2



CC 37-5 (Plastics Manufacture and Processing)

ST epoxy resin diaminotetraphenoxycyclotriphosphazene crosslinking property; flammability epoxy resin diaminotetraphenoxycyclotriphosphazene crosslinking; **dielec** property epoxy resin diaminotetraphenoxycyclotriphosphazene crosslinking

IT Epoxy resins, properties

RL: PRP (Properties)

(crosslinked with diaminotetraorganocyclotriphosphazenes, with good of chem. and fire resistance and good **dielec.** properties)

IT Crosslinking agents

(diaminotetraorganocyclotriphosphazenes, for prepn. of chem.- and fire-resistant epoxy resins with good **dielec.** properties)

IT **Dielectric** constant and dispersion

**Dielectric** loss

Glass temperature and transition

(of diaminotetraorganocyclotriphosphazene-crosslinked epoxy resins)

IT 5032-83-7 7142-98-5 76657-13-1 77865-61-3 77865-63-5  
108455-09-0 108455-13-6

RL: MOA (Modifier or additive use); USES (Uses)  
(crosslinking agents, for prepn. of chem.- and fire-resistant epoxy resins with good **dielec.** properties)

IT 36704-31-1P, Epikote 828-ethylenediamine copolymer 51555-22-7P,  
Epikote 828-m-phenylenediamine copolymer 56727-50-5P, Epikote  
828-hexamethylenediamine copolymer 97649-52-0P, Epikote  
828-p-phenylenediamine copolymer 108455-07-8P 108455-08-9P  
108455-10-3P **108455-11-4P** 116389-88-9P, Epikote  
828-o-phenylenediamine copolymer 131789-57-6P 156546-36-0P  
156546-37-1P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(prepn. and physicomech. and **dielec.** properties and  
chem. resistance and flammability of)

L31 ANSWER 4 OF 5 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1993:103550 HCAPLUS Full-text

DOCUMENT NUMBER: 118:103550

TITLE: Glass fiber-reinforced composites of  
phosphorus-containing epoxy resin systems

AUTHOR(S): Patel, Sandeep R.; Patel, Ranjan G.

CORPORATE SOURCE: Dep. Chem., Sardar Patel Univ., Vallabh  
Vidyanagar, 388120, India

SOURCE: High Performance Polymers (1991), 3(4), 237-42  
CODEN: HPPOEX; ISSN: 0954-0083

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Epoxy systems composed of conventional (DGEBA), tetrafunctional  
[tetraglycidylbis(4-amino-3-tolyl)cyclohexane], and phosphorylated  
[hexaglycidyltris(m-aminophenyl)phosphine oxide] epoxy resins were used for  
the fabrication of glass-fiber-reinforced composites using arom. diamines  
(4,4'-diaminodiphenylmethane and 4,4'-diaminodiphenyl sulfone) as curing  
agents. The fabricated composites were evaluated for their limiting O index,  
mech. properties, **dielec.** properties, and chem. resistance. The incorporation  
of an epoxy fortifier (Ph glycidyl ether-4-hydroxyacetanilide condensation  
product) resulted in a significant improvement in mech. properties.

IT **146115-31-3**

RL: USES (Uses)  
(laminates with glass fibers, chem. and **dielec.** and  
mech. properties and fire resistance of)

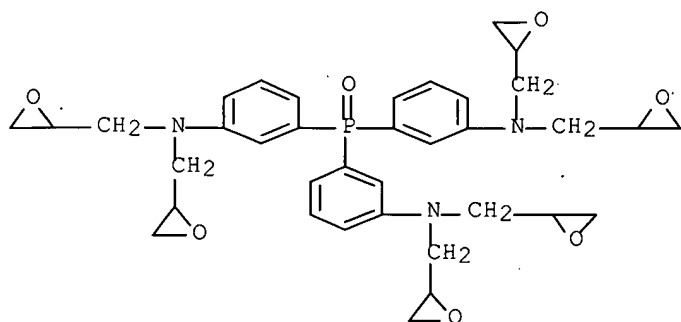
RN 146115-31-3 HCAPLUS

CN Oxiranemethanamine, N,N'-[cyclohexylidenebis(2-methyl-4,1-  
phenylene)]bis[N-(oxiranylmethyl)-, polymer with  
N,N',N''-(phosphinylidynetris-3,1-phenylene)tris[N-  
(oxiranylmethyl)oxiranemethanamine] and 4,4'-  
sulfonylbis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 145191-21-5

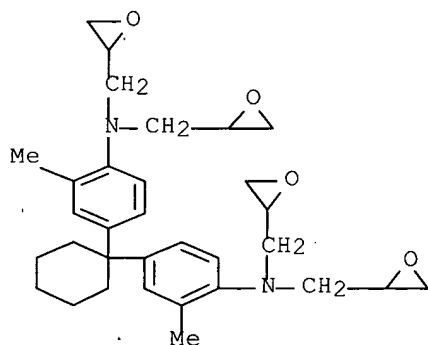
CMF C36 H42 N3 O7 P



CM 2

CRN 135830-70-5

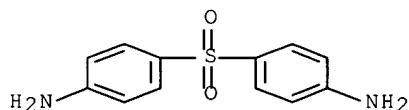
CMF C32 H42 N2 O4



CM 3

CRN 80-08-0

CMF C12 H12 N2 O2 S



CC 37-6 (Plastics Manufacture and Processing)

Section cross-reference(s): 36

IT Glass fibers, properties

RL: PRP (Properties)

(laminates with phosphorus-contg. epoxy resins, chem. and dielec. and mech. properties and fire resistance of)

IT Dielectric strength

Electric resistance

(of phosphorus-contg. epoxy resin-glass fiber laminates)

IT Epoxy resins, properties  
 RL: USES (Uses)  
 (phosphorus-contg., laminates with glass fibers, chem. and **dielec.** and mech. properties and fire resistance of)

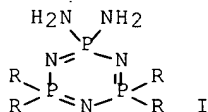
IT 146115-29-9 146115-30-2 **146115-31-3**  
 RL: USES (Uses)  
 (laminates with glass fibers, chem. and **dielec.** and mech. properties and fire resistance of)

IT 103137-52-6  
 RL: USES (Uses)  
 (phosphorus-contg. epoxy resins contg., laminates with glass fibers, chem. and **dielec.** and mech. properties and fire resistance of)

L31 ANSWER 5 OF 5 HCAPLUS COPYRIGHT 2006 ACS on STN  
 ACCESSION NUMBER: 1987:214938 HCAPLUS Full-text  
 DOCUMENT NUMBER: 106:214938  
 TITLE: Epoxy resin compositions  
 INVENTOR(S): Sakamoto, Norihiko; Kajiwara, Naruyuki; Okamoto, Kazuo  
 PATENT ASSIGNEE(S): Nitto Kasei Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO. -----	KIND ----	DATE -----	APPLICATION NO. -----	DATE
JP 61190522	A2	19860825	JP 1985-32517	198502 19
JP 03004565	B4	19910123		
PRIORITY APPLN. INFO.:			JP 1985-32517	198502 19

GI



AB Title compns., giving cured products with hard surface and good elec. insulating properties, contain diaminotetraorganocyclotriphosp hazenes I [R = alkoxy, aryloxy, alkylthio, arylthio, NR<sub>1</sub>R<sub>2</sub> (R<sub>1</sub>, R<sub>2</sub> = hydrocarbyl, H but ≥1 of R<sub>1</sub> and R<sub>2</sub> must be hydrocarbyl)] as a hardener. Epikote 828 50, Epikote 1045-A-70 (brominated bisphenol A epoxy resin) 50, I (R = PhO) 32, and benzyldimethylamine 2 parts were cured at 140° for 6 h to give a product showing pencil hardness 3H, vol. resistivity 3 + 10<sup>16</sup> Ω-cm. with self-extinguishing property during the flame test (JIS K 6911-1979).

IT 108455-16-9

RL: USES (Uses)

(elec. insulators, fire-resistant, with hard cured surfaces)

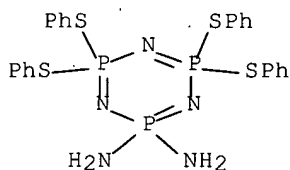
RN 108455-16-9 HCAPLUS

CN Phenol, 4,4'-(1-methylethylidene)bis-, polymer with  
(chloromethyl)oxirane, 2,2-diamino-2,2,4,4,6,6-hexahydro-4,4,6,6-  
tetrakis(phenylthio)-1,3,5,2,4,6-triazatriphosphorine and Epikote  
1045A70 (9CI) (CA INDEX NAME)

CM 1

CRN 77865-61-3

CMF C24 H24 N5 P3 S4



CM 2

CRN 56257-98-8

CMF Unspecified

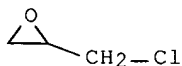
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 3

CRN 106-89-8

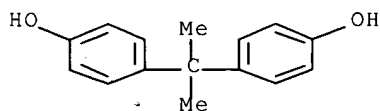
CMF C3 H5 Cl O



CM 4

CRN 80-05-7

CMF C15 H16 O2



IT 108455-11-4



RL: USES (Uses)  
(elec. insulators, with hard cured surface)

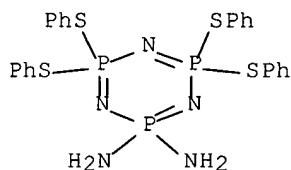
RN 108455-11-4 HCAPLUS

CN Phenol, 4,4'-(1-methylethylidene)bis-, polymer with  
(chloromethyl)oxirane and 2,2-diamino-2,2,4,4,6,6-hexahydro-4,4,6,6-  
tetrakis(phenylthio)-1,3,5,2,4,6-triazatriphosphorine (9CI) (CA  
INDEX NAME)

CM 1

CRN 77865-61-3

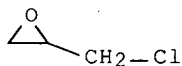
CMF C24 H24 N5 P3 S4



CM 2

CRN 106-89-8

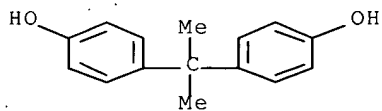
CMF C3 H5 Cl O



CM 3

CRN 80-05-7

CMF C15 H16 O2



IC ICM C08G059-50

CC 37-6. (Plastics Manufacture and Processing)

IT Electric insulators and **Dielectrics**

(epoxy resins, diaminocyclophosphazenes as curing agents for)

IT 108455-12-5 108455-14-7 108455-15-8 **108455-16-9**

108490-96-6 108490-97-7 108490-98-8

RL: USES (Uses)

(elec. insulators, fire-resistant, with hard cured surfaces)

IT 108455-07-8 108455-08-9 108455-10-3 **108455-11-4**

RL: USES (Uses)  
(elec. insulators, with hard cured surface)

=>